**Fig. 1**

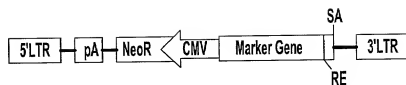


Fig. 2A

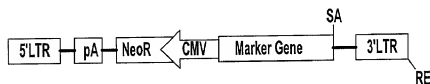


Fig. 2B

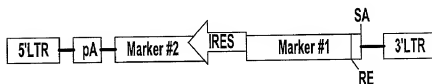


Fig. 2C

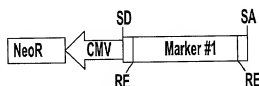


Fig. 2D

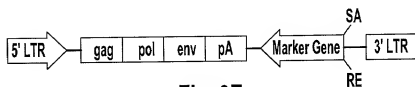


Fig. 2E



Fig. 2F

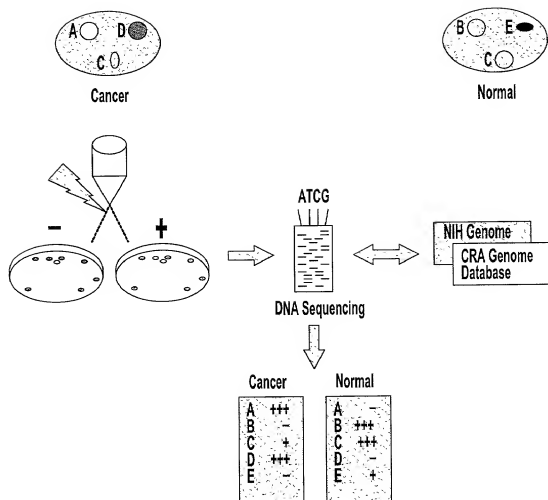


Fig.3

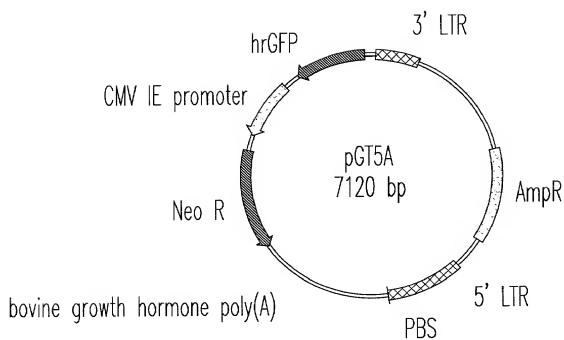


Fig. 4A

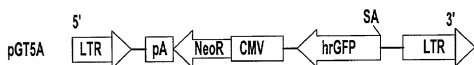


Fig. 4B

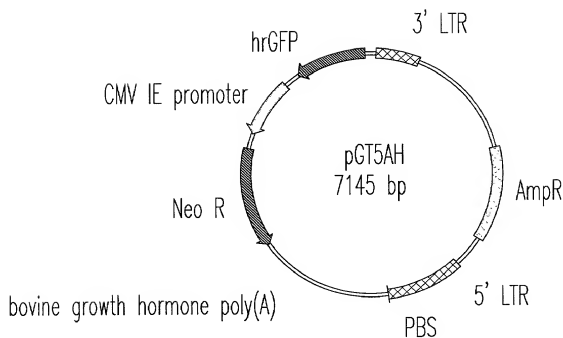


Fig. 5A

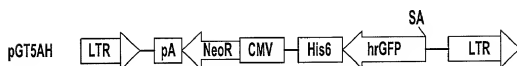


Fig. 5B

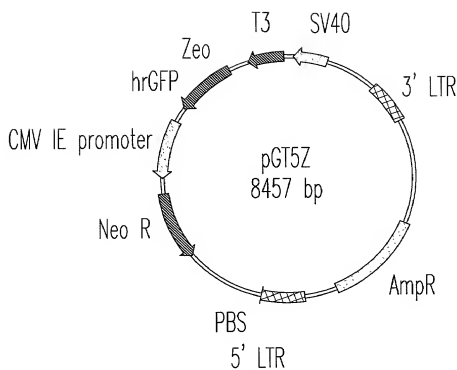


Fig. 6A

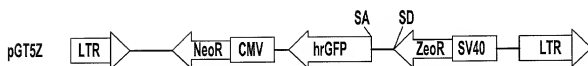


Fig. 6B

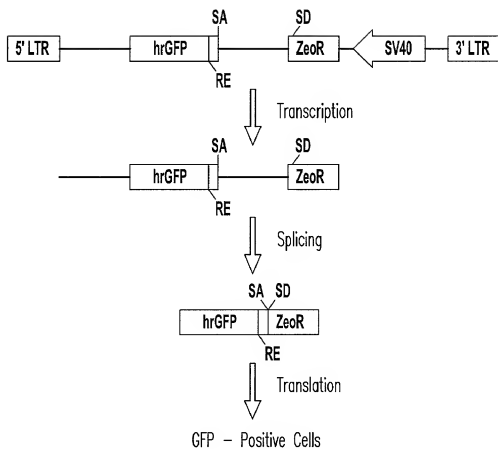


Fig. 7A

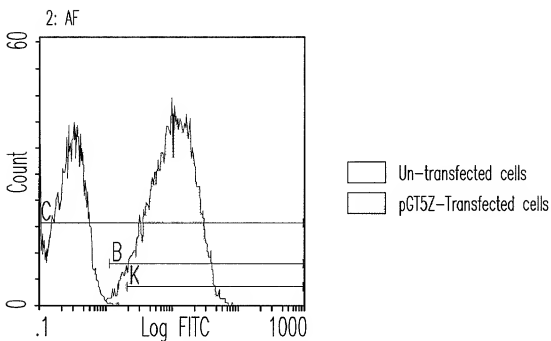


Fig. 7B

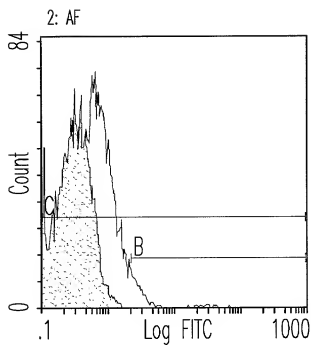


Fig. 8A

GFP (-) population
 GFP (+) population
 PA317 without transfection

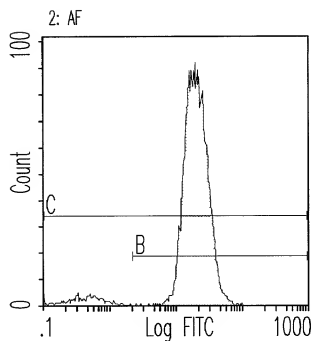


Fig. 8B

GFP (-) population
 GFP (+) population
 PA317 without transfection

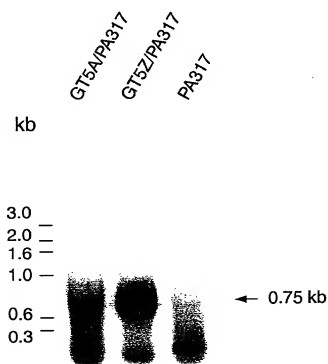


Fig. 9

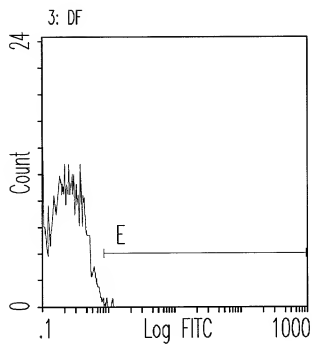


Fig. 10A

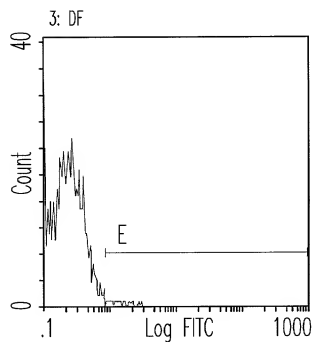


Fig. 10B

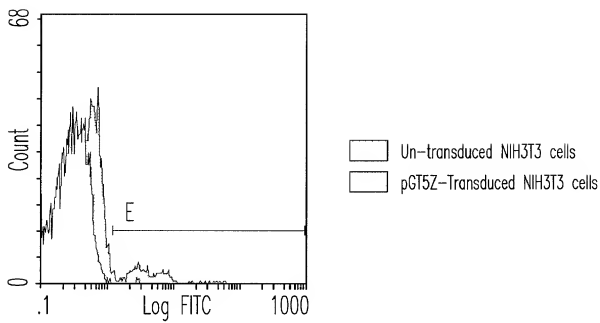


Fig. 11

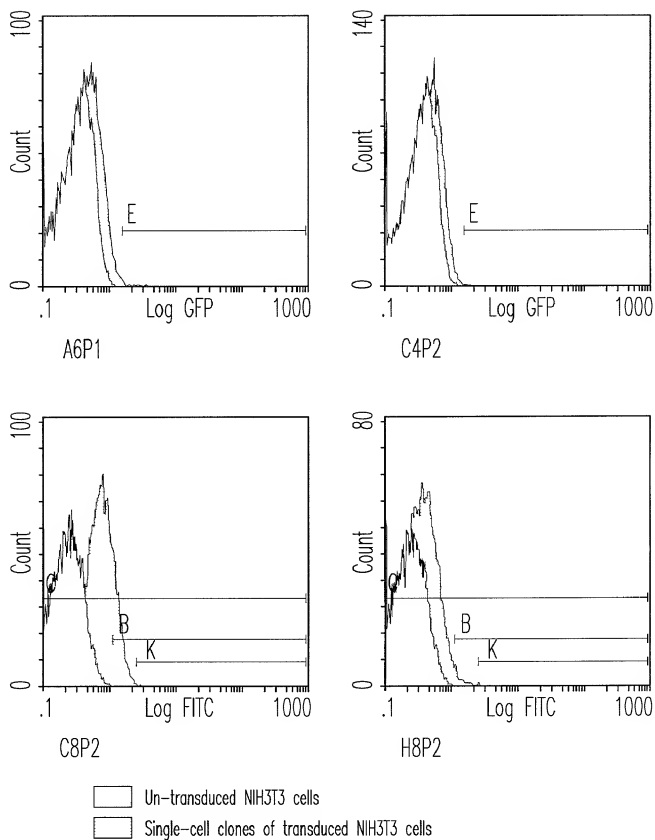


Fig. 12

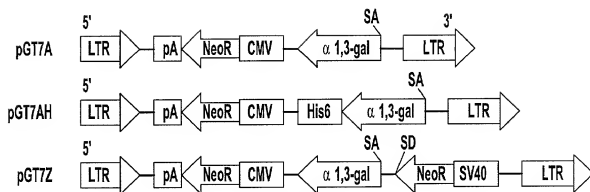


Fig. 13A

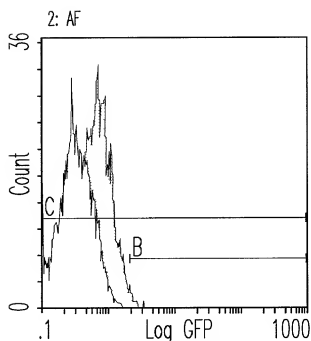


Fig. 13B

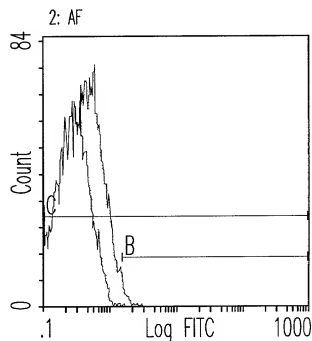


Fig. 13C

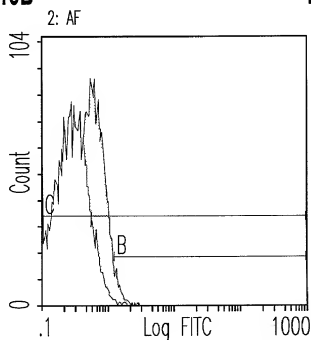
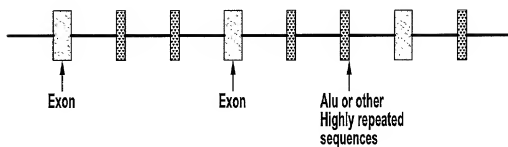


Fig. 13D

Natural genomic structure



Example Vector for Homologous Recombinations

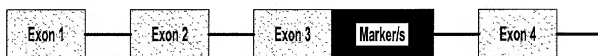


Fig. 14

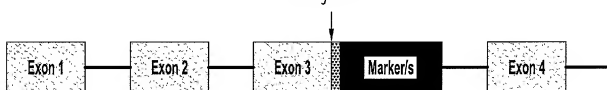
Natural genomic structure



Transfection and integration of vector/s by illegitimate recombination



1bp added to change
reading frame



2bp added to change
reading frame

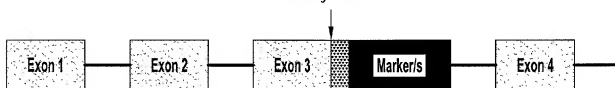
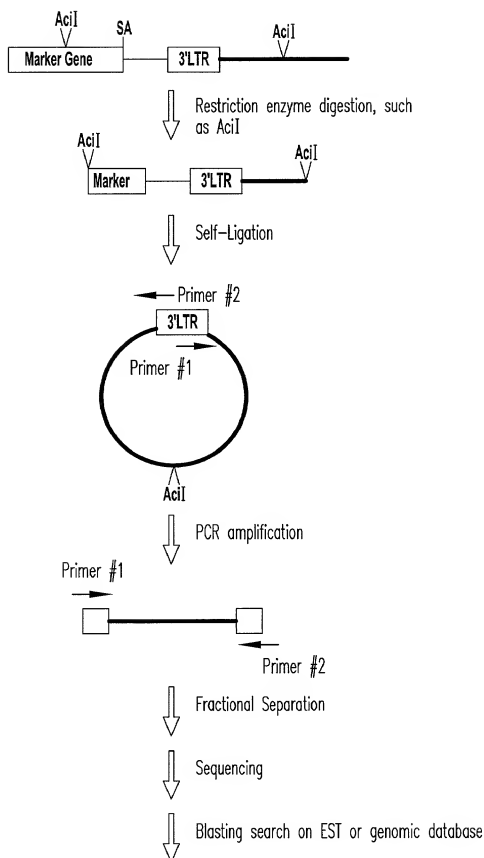


Fig. 15



Gene Expression Profiling Databases on target cells vs. counterpart

Fig. 16

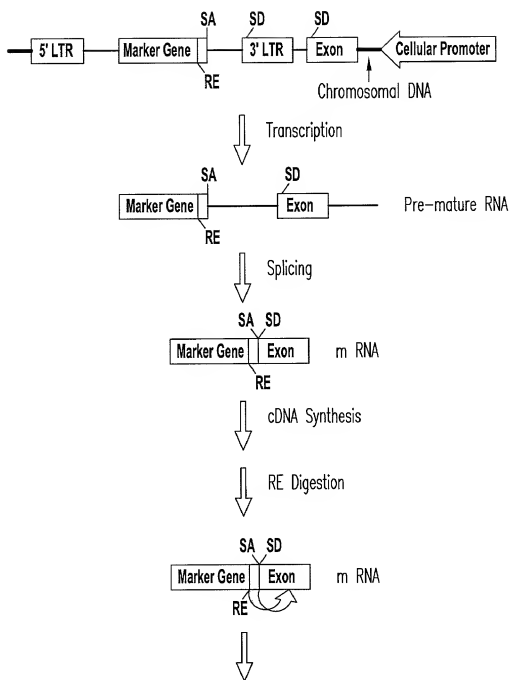
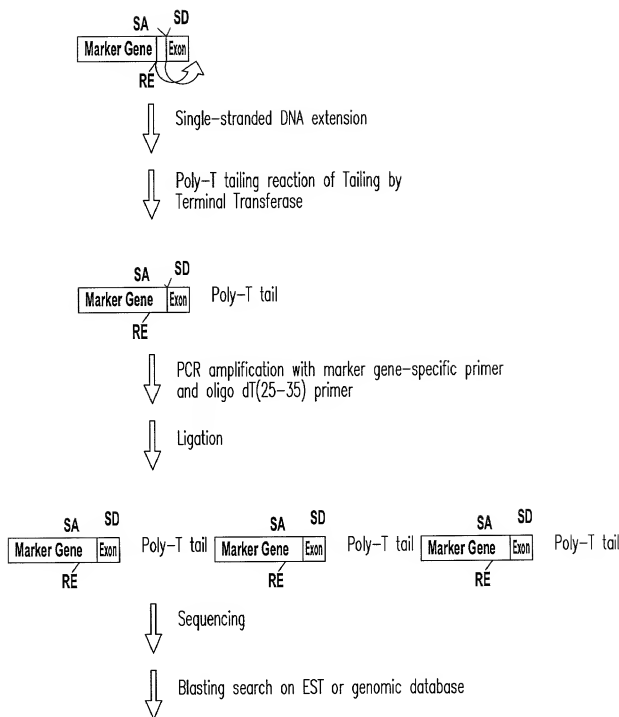


Fig. 17A



Gene Expression Profiling Database on target cells vs. counterpart

Fig. 17B

PROCESS STEP

EXAMPLES

Cell Set



colon cancer /vs.
normal colon cells

or
lung cancer /vs.
normal lung epithelium

or
young organism cell set /vs.
old organism cell set

Vextor Tag



MMLV w/
hrGFP
or
 $\alpha(1,3)$ galactosyltransferase
or
DNA transfection

Measurement



FACS scan for hrGFP florescence
or
ELISA for hrGFP protein
or
FACS scan for $\alpha(1,3)$ GT induced α -gal Ag
or
ELISA of $\alpha(1,3)$ GT protein
or
use of magnetic field or chemiluminescence
or
enzymatic reaction for protein quantitation

PCR



STARS
or
SAVI
or
PCR

Sequencing



pyro sequencing
or
AB1 Machine Sequencing
or
sequencing

Database



cancer cells database
or
normal cell database

Fig. 18A

PROCESS STEP

EXAMPLES

Search Process



Comparative
Proteomics



Pathway
Analysis



Target
Validation/
Diagnostics



Drug
Development

Parallel BLAST search EST
or
Search Genome database full sequence to define intron/exon
or
Alternative splicing database

Compare colon cancer cell to normal colon epithelium
or
Compare lung cancer cell to normal lung cell

multigene co-variant
or
Specific cell circuit analysis e.g. cell cycle

Monoclonal kb diagnostics Northern analysis, Western analysis
or
DNA assay/gene chip comparison
or
SNP Associations
or
Yeast 2-hybrid fishing for protein partner

monoclonal Antibody treatment
or
small molecule library search and/or
treatment
or
gene therapy
or
anti-sense
or
Ribozyme
or
any other conventional
pharmaceutical drug development

Fig. 18B

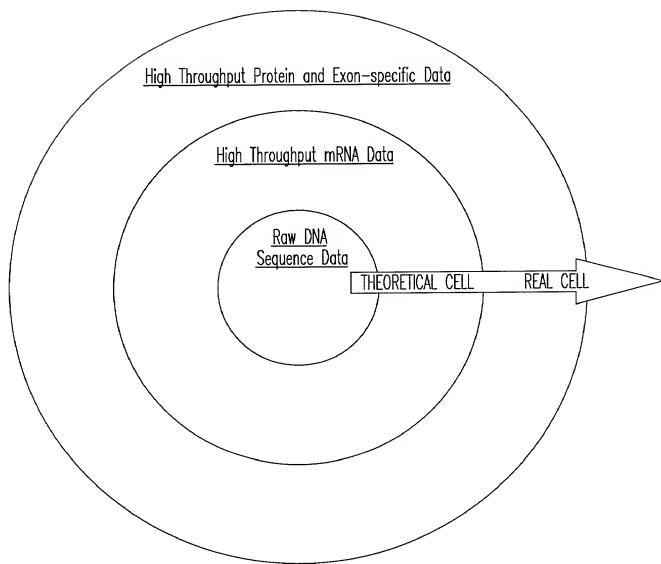


Fig. 19

11



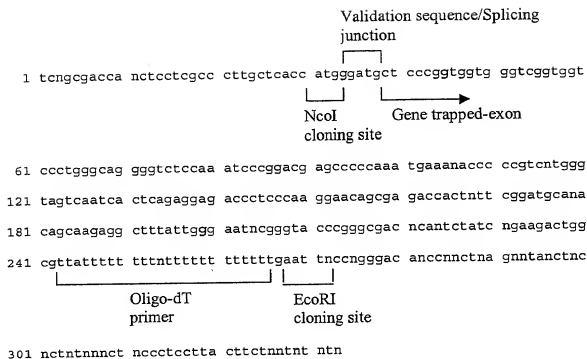


Fig. 21